Augusta, Georgia

Stormwater Management Program

October 2012

[Revisions: January 2013/March 2013/June 2013/July 2013]

Prepared in Conjunction with Requirements of

Georgia Municipal Separate Storm Sewer System

NPDES Permit No. GAS 000200

Augusta, Georgia
Engineering Department – Engineering Division
505 Telfair Street, Augusta, Georgia 30901

Revision (4): July 2013/hm

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APPENDICES

Acronyms and Abbreviations

ABS -	acrylonitrile butadiene styrene (black plastic)
AED -	Augusta Engineering Department
AMCA -	American Mosquito Control Association
AUGUSTA -	Augusta Richmond County
AUD -	Augusta Utility Department
BMP -	best management practice
°C -	degrees Celsius
CMP -	corrugated metal pipe
CFR -	Code of Federal Regulations
Cfu/100 ml -	colony forming units per 100 milliliters
EPA -	United States Environmental Protection Agency
EMA -	Emergency Management Agency
EPD -	Georgia Environmental Protection Division
FTE -	full time equivalent
GSWCC -	Georgia Soil and Water Conservation Commission
HVPS -	highly visible pollutant source
LEED -	Leadership in Energy and Environmental Design
LID -	Low Impact Development
MEP -	maximum extent practicable
Mg/L -	milligrams per liter
MS4 -	Municipal Separate Storm Sewer System
NOV -	notice of violation
NPDES -	National Pollution Discharge Elimination System
NTU -	Nephelometric turbidity units
PVC -	polyvinyl chloride
RCP -	reinforced concrete pipe
SWMP -	storm water management program
SWPPP -	storm water pollution prevention plan
TMDL -	total daily maximum load
USACE -	United States Army Corps of Engineers

Background

This revised stormwater management program (SWMP) has been prepared to meet requirements associated with reissuance of Augusta, Georgia (Augusta) (formerly known as Augusta-Richmond County) phase I Medium Municipal Separate Storm System (MS4) permit number GAS000200 (Permit). This permit was reissued by the Georgia Environmental Protection Division (EPD) on April 12, 2012. Components of the previously approved SWMP that continue to meet 2012 re-issued Permit requirements have been retained and incorporated herein. Numerical citations provided after section headings in this plan refer to applicable passages from Part 40 of the Federal Code of Regulations, Section 122 or 40 CFRl22 (EPA 2009a).

The proposed SWMP addresses applicable regulatory requirements and is designed to reduce the discharge of pollutants from the Augusta's MS4 to the maximum extent practicable (MEP) in order to protect water quality of local watersheds. The program is described under Section 3.0.

1. Legal Authority

Augusta's various ordinances, regulations, technical manuals, and land development documents provide needed legal authority to implement and enforce SWMP control measures that are designed to reduce discharge of pollutants from Augusta's MS4 to the maximum extent practicable. Key ordinances are listed below:

i) Land Subdivision Regulations; ii) Site Plan Regulations; iii) Stormwater Management Ordinance; iv) Stormwater Management Plan Technical Manual; v) Tree Ordinance; Flood Damage Prevention Ordinance; and vi) Soil Erosion, Sedimentation and Pollution Control Ordinance

2. Sharing Responsibility

There is no other entity sharing responsibility with Augusta, Georgia for implementing and enforcing this SWMP.

3. Stormwater Management Plan Components

Augusta SWMP consists of following components. Each component is described in detail under a separate section.

3.1 Structural and Source Control Measures;
3.2 Illicit Discharge Detection and Elimination Program;
3.3 Industrial Facility Stormwater Discharge Control;
3.4 Construction Site Management;
3.5 Highly Visible Pollutant Sources;
3.6 Enforcement Response Plan;
3.7 Monitoring for Discharges to Impaired Waterbodies;
3.8 Public Education;
3.9 Public Involvement; and
3.10 Post Construction

3.1 Structural and Source Control Measures (122.26(d)(2)(iv)(A))

Control Structures are structural components of a stormwater system that detain stormwater and allow its controlled release OR structures that regulate runoff discharge from best management practices. Typically control structures include manholes or vaults fitted with baffles, weirs or orifices. Storm Sewer inlets, catch basins, grates are major components of the storm sewer conveyance system and serve an important function in safely conveying surface runoff through MS4.

3.1.1 As of April 2012, Augusta has an inventory of permanent stormwater structures (including control structures such as Stormwater Management Facilities (ponds) and MS4 Out falls including:

Stormwater Control Structures:

- Detention/retention ponds -678 ponds (213 owned & maintained by Augusta, 23 owned & maintained by the local board of education, and the remainder are privately owned & maintained)
- Stormwater outfalls -809. Map and Inventory of Augusta MS4 control structures -Appendix A & Appendix B

Stormwater Conveyance Structures**:**

- Catch basins -12,448
- Storm drain pipes -566 miles
- Ditches -731 miles

Control Structures" are structural components of a stormwater system that detain stormwater and allow its controlled release. OR "Structures" that regulate runoff discharge from best management practices. For this reason submitted map shows only 'Ponds" and "outfalls". Storm drainage structures, pipes and ditches are considered "other stormwater structures (conveyance structures)" and are documented as such under submitted SWMP subsection 3.1.1. Augusta is preparing a consolidated map to submit it with 2013-2014 MS4 annual report. Mapping is ongoing effort and Augusta will allocate needed resources to complete it by May 15, 2014. However, Augusta will submit separate request for time extension if needed.

3.1.2. Structural Control Maintenance (122.26(d)(2)(iv)(A)(1))

Augusta takes control of stormwater infrastructure components slated for public ownership after the structures have been inspected, accepted by the Augusta commission, and after the 18-month contractor warranty period has elapsed.

Catch basins will be maintained by the Augusta Engineering Department-Maintenance (AED-Maintenance) on an as-needed basis. At a minimum, four (4) Augusta maintenance crews will be in the field 5 days per week, with each crew responsible for not only maintaining stormwater structures, but also inspecting and repairing pavement, sidewalks, curbs and gutters, clearing nuisance properties, and maintaining the Augusta levee system. Catch basin inspections will be conducted at a minimum rate of 20% of the total number of basins per year. In addition to periodic cleaning, maintenance will consist of repairing catch basins that are not functioning properly.

The Augusta Engineering Department-Engineering (AED-Engineering) requires that certified as-built plans be submitted at completion and final platting of new developments. Stormwater infrastructure information from these as-built plans will be incorporated into the municipal inventory.

Storm drain pipes will be inspected by either the AED-Maintenance or AED-Engineering staff. The AED-Maintenance will respond to specific complaints and problems (typically blockages, overflows, and localized flooding), and the AED-Engineering will monitor storm drain pipe outfalls for illicit discharges and connections. Inspection of these structures will be based on a 5-year revolving schedule; maintenance will be prioritized based on the severity of damage and potential for additional damage to the structure and its surroundings should it fail. Underground portions of storm pipes will be inspected on an as-needed basis. The AED will work with the Augusta Utilities Department (AUD) in the event that cross flow between the storm drain system and either sanitary sewer or potable water pipes are detected via outfall monitoring. MS4-0utfall and Stormwater Facility outfall monitoring will be conducted at a minimum rate of 20% of the total number of outfalls per year. Stormwater facility outfalls will be inspected in

conjunction with respective facility inspection. Stormwater ditches will be inspected, on average, once per year.

Detention ponds will be inspected by the AED-Engineering at a minimum rate of 20% of the total number of ponds per year. In this manner, all ponds and associated outfalls in the inventory will be inspected at least once in a 5-year period. If deficiencies are noted, the owner of the pond will be notified in writing and given a 30 day notice to correct problems. After 30 days, the pond will re-inspected and if the same deficiencies are noted, a formal notice of violation (NOV) will be issued giving the owner 15 days from time of receipt of the NOV to make the necessary repairs or maintenance activities. All NOVs will be mailed via certified mail and regular post. If problems are not corrected within 15 days of the NOV, enforcement action will be commenced, in accordance with applicable Augusta ordinances. An inventory of stormwater management facilities (ponds) is presented in Appendix B of this plan.

Storm water outfalls (MS4 outfalls & stormwater facility outfalls) will be inspected and monitored by the AED at a minimum rate of 20% of the total number of outfalls per year.

3.1.3. Planning Procedures (122.26(d)(2)(iv)(A)(2))

The goal of this SWMP is to reduce pollutant loads in surface water features in Augusta storm conveyance to the maximum extent practicable (MEP) with minimal disruption to the local population and Augusta operations. Implementation of this plan will be achieved by inspections, monitoring, sampling and analysis, public outreach, and if necessary, enforcement action.

All new land development, whether commercial or residential, will be required to maintain pre-development runoff release rates. This requirement will be strictly enforced to maintain discharge velocities and mitigate water quality degradation by retaining stormwater flow and permitting solids, particulates, and other contaminants to settle out, naturally decompose, or volatilize before being released to receiving waters. More stringent, watershed-specific development requirements will be implemented in special consideration basins, such as in the Rae's Creek and Rocky Creek basins.

The director of the Augusta Planning and Development Department (APDD) is responsible for regulating land development, and to protect human health and the environment from the potential negative impacts of converting land from its natural state to urban uses. Augusta Engineering Department (AED) is enforcement arm of this process.

Augusta has a Comprehensive Plan in place to manage land use and zoning. The original plan was adopted in 1992. The Plan is updated periodically. This Comprehensive Plan is a long-range plan for managing and guiding Augusta's development over the next decade and beyond. Three principal components of the Augusta Comprehensive Plan are the Community Assessment, the Community participation, and the Community Agenda. In summary, the Plan examines the existing conditions affecting development, enumerates the needs and goals for the future development of the City, and spells out the strategy for addressing needs and achieving goals. The elements of the Plan include Population, Housing, Economic Development, Transportation, Community Facilities and Services, Historic Resources, Natural Resources/Greenspace Program, and Land Use. The Natural Resources/Greenspace Program includes protection of natural and environmentally sensitive resources in the City Addressing such topics as topography, soils, agricultural land and forestland, air quality and water resources. The City's Greenspace Program is also integrated into this element of the plan.

The various ordinances, regulations, technical manuals, and other documents that together constitute Augusta development documents consist of the following:

- Comprehensive Zoning Ordinance
- Land Subdivision Regulations
- Site plan Regulations
- Stormwater Management
- Stormwater Management Plan Technical Manual
- Street and Road Design Technical Manual
- Tree Ordinance
- Flood Damage Prevention Ordinance
- Soil Erosion, Sedimentation and Pollution Control Ordinance
- Grading Ordinance
- Groundwater Recharge Area Protection Ordinance
- Water Supply and Watershed Ordinance
- Augusta Utilities Department -Design Guidelines
- Rights-of-Way Encroachment Guidelines
- Use of County Rights-of-Way

A summary of relevant Augusta regulations and ordinances designed to protect human health and the environment is provided below. The full text of each ordinance may be found at ***http://www.augustaga.gov*** *under* Augusta Planning &Development Department home page and Augusta Law Department homepage.

Comprehensive Zoning Ordinance

The Comprehensive Zoning Ordinance defines development requirements related to zoning, including setbacks, off-street parking, and general requirements that apply to individual land use types.

Site Plan Regulations

The Augusta Site Plan Regulations were established to define minimum site plan design requirements. The AED-Engineering is responsible for inspections to verify that development activities are consistent with approved site plans.

Stormwater Management Ordinance

The Augusta Stormwater Management Ordinance is administered by the AED. The goals of this ordinance include protection of local streams and lakes by prohibiting illicit sewer and waste water connections to the stormwater conveyance system, eliminating dumping or disposal of material other than stormwater into storm drains, and protecting the stormwater system from pollutants associated with commercial and industrial facilities. A companion document to this ordinance, the *Stormwater Management Plan Technical Manual* establishes minimum requirements for designing stormwater conveyance and management system.

Tree Ordinance and Illustrated Guide

The Augusta Tree Ordinance and Illustrated Guide provides standards for the protection of public trees, for the designation of landmark trees, and further provides landscaping, tree protection and tree establishment standards for the development of private property in Augusta, Georgia. It is the purpose of this regulation to promote the public health, safety, and general welfare of provisions designed to:

- Aid in stabilizing the environment's ecological balance by contributing to the processes of air purification, oxygen regeneration, wildlife habitat, groundwater recharge, and stormwater runoff retardation, while concurrently facilitating noise, glare, and heat abatement
- Encourage the preservation of existing trees and vegetation
- Prevent soil erosion

- Protect and enhance the aesthetic qualities of the community
- Prevent structural and pavement saturation
- Safeguard and enhance private property values and protect private and public investment
- Conserve energy

Flood Damage Prevention Ordinance

The Flood Damage Prevention Ordinance was established to minimize public and private losses due to flooding. This ordinance is designed to:

- Restrict land develop activities within 100-year floodplain area that will result in an increase in flood stage, velocity, or erosion
- Control alteration of natural floodplains, stream channels, and natural protective barriers
- Limit filling, grading, dredging, and other development that may increase flood damage or erosion
- Prevent or regulate construction of flood barriers that will divert flood water to or increase flood hazards to other land

Via this ordinance, Augusta ensures that all applicable flood-related permits are received by the appropriate governmental agencies. The Zoning Board of Appeals hears and decides on appeals regarding variances to this regulation. Variances will not be issued within designated floodway or lower floodway fringes if an increase in flood levels during base flood discharge is likely to occur.

Soil Erosion. Sedimentation and Pollution Control Ordinance

The Augusta Soil Erosion, Sedimentation, and Pollution Control Ordinance addresses erosion control and stormwater quality management practices for construction activities. This regulation is consistent with and modeled on the State of Georgia requirements for soil erosion, sedimentation and pollution control plans. The AED is responsible, with assistance of National Resource Conversation Services (NRCS), for reviewing soil erosion and sediment control plans, inspecting active construction sites, and taking enforcement action, as needed.

Grading Ordinance

Land grading activities are regulated by this ordinance. This ordinance provides rules and regulations for excavation, filling, and grading activities within Augusta, and provides for administration and enforcement of these rules and regulations.

Groundwater Recharge Area Protection Ordinance

To provide for the health, safety and welfare of the public and a healthy economic climate within Augusta and surrounding communities, it is essential that the quality of public drinking water be ensured. For this reason, it is necessary to protect the subsurface water resources that Augusta and surrounding communities rely on as sources of public water. Groundwater resources are contained within aquifers, which are permeable, rock or sediment strata. These aquifers are replenished by infiltration of surface water runoff in zones of the surface known as groundwater recharge areas. Groundwater is susceptible to contamination when unrestricted development occurs within significant groundwater recharge areas. It is, therefore, necessary to manage land use within groundwater recharge areas in order to ensure that pollution threats are minimized.

The objectives of this ordinance are:

- Protect groundwater quality by restricting land uses that generate, use or store dangerous pollutants in recharge areas
- Protect groundwater quality by limiting density of development

- Protect groundwater quality by ensuring that any development that occurs within the recharge area shall have no adverse effect on groundwater quality

Greenspace Program

In addition to these ordinances, Augusta implemented the Georgia Greenspace Program in November 2000 to provide both short-term and long-term plans to manage and protect local greenspace and environmentally sensitive areas. The program, which is managed by the Augusta Planning & Zoning Commission, has a goal of permanently setting aside and protecting approximately 20% of the land (33,269 acres) in Augusta, excluding that contained within the limits of Fort Gordon. Six principal areas were identified where this protection will occur, including:

I) Land adjacent to the Augusta Canal
2) Land adjacent to the Savannah River
3) Land within Phinizy Swamp
4) Land in the Rae's Creek watershed
5) Land in the Rocky Creek watershed
6) Greenbelts adjacent to several streams in the southern portion of Augusta

3.1.4. Street Maintenance (122.26(d)(2)(iv)(A)(3))

Evaluation of pollutant levels in stormwater resulting from runoff from streets indicates that paved roadways can be a significant contributor to surface water pollution. To reduce contaminant levels to the MEP, the US Environmental Protection Agency (EPA) has mandated that municipalities act to review their road management practices to improve the cleanliness of the road system.

The Augusta Environmental Services (AESD) manages street sweeping operation within Augusta, GA jurisdictional boundaries. Sweeping is performed by combination of In-house Forces and Contract Services. Sweeping, and service frequency varies with the Road Service Classification. Primary service area includes sweeping of Arterials and Collectors roads that are swept once every quarter and before major events such as "Masters Golf Tournament". Local roads are swept on as needed basis. Each time sweeper hopper is full, depending on sweeper type, it will empty directly at Augusta landfill or into dedicated roll-off containers. These containers are brought to the landfill when full. Landfill tracks collect waste by weighing it as it is disposed off at the facility. Under MS4 program, Augusta is proposing to sweep at a minimum of 1,500 miles in a reporting year period. This information along with total volume or weight of refuse removed will be submitted as part of annual report during the term of this Permit.

The AED-Maintenance operates two Vacon pump trucks designed to remove sand, silt, and girt prior to it discharging into the storm sewer system. Removed debris are disposed off at Augusta Landfill and tracked by weight at disposal time. AED also has on-call contract services on board to supplement maintenance work on as needed basis. AED keeps track of maintenance activities using electronic database. Requested and performed work is logged electronically as "work order" in Augusta's customized database such as "Lucity". Recorded data can be retrieved for reporting in the MS4 annual report. Augusta is proposing catch basins inspections and maintenance (if needed) at a minimum rate of 20% of the total number of basins per year. This information along with total volume or weight of debris removed will be submitted as part of annual report during the term of this Permit.

The sub-tropical climate in the Augusta region does not require methods to prevent polluting as a result of the application of salts or other compounds for roadway de-icing. Litter removal is conducted by AED-Maintenance, community service volunteers, or correctional facility trustee teams prior to mowing. Collected litter is bagged and taken to Augusta Landfill. Landfill tracks collected waste by weighing it as it is disposed of at the facility.

Sediment control from roadway runoff, particularly during street maintenance and repair activities, is the primary storm water quality issue in the Augusta area with regard to streets. Sediment and erosion control measures taken during street maintenance activities will include:

- Use of silt fences
- Installation and maintenance of construction entrances
- Minimization of vegetation remove or disturbance
- Seeding, matting, mulching, or installation of other soil stabilization materials if vegetation must be removed

3.1.5. Flood Management Projects (122.26(d)(2)(iv)(A)(4))

New flood control projects will be assessed for water quality impacts using Augusta Technical Design Manual and associated guidance documents prepared by Low Impact Development Center and NCSU Stormwater Engineer Group. These projects also will be subject to the development constraints for sensitive areas imposed by the City. In addition to addressing the issues that deal with flood plain and soil erosion and sediment control, the development regulations require that the developer submit a Storm water Management Plan, a hydrology study and water quality assessment information for review by the City Engineer. All stormwater runoff shall be adequately treated prior to discharge The storm water management system shall be designed to capture and treat the water quality treatment of volume, which is defined as the runoff volume resulting from the first 1.2 of rainfall. To ensure aforementioned conditions are met, flood control projects are subject to the same review process that is described under section 3.4.2.

Existing flood control structures in the Augusta area are dry detention structures and are designed solely to release the incoming water at a controlled rate. It would not be feasible or cost-effective to retrofit these structures. Also, gathered water quality data in Augusta area suggest that all constituents of interest are present at low concentrations in incoming stormwater. A watershed assessment study completed in 2002 and other monitoring data indicate that streams in the Augusta area meet the surface water quality standards except fecal coliform. Assessment of historic fecal coliform data does not warrant retrofitting existing flood control structures. Furthermore, retrofitting existing flood control devices will not yield the desired objective in a cost-effective way. Augusta is proposing no further assessment. However, if future in-stream water quality problem identified or new development occurs in the service area, these ponds will be reassessed for possible retrofit.

3.1.6. Municipal Waste Facilities (122.26(d)(2)(iv)(A)(S))

Waste Facilities Not Subject to Industrial General Permit (IGP)

This section describes Municipal Waste Facilities with potential to cause pollution that are not subject to Industrial Stormwater General Permit. Augusta does not operate any such waste facility and is proposing no further reporting under this category.

3.1.7 Municipal Facilities with the Potential to Cause Pollution (122.26(d)(2)(iv)(A)(S))

This section describes Municipal facilities that are not subject to IGP but have potential to cause pollution. Augusta following facilities possibly fall under such category.

- Highland Avenue Water Treatment Plant
- Tobacco Road Water Treatment Plant
- Engineering Maintenance Tobacco Road facility
- Various Recreation and Parks Department storage sites (i.e., fertilizers, herbicides, and pesticides) These facilities include: Riverwalk (chemicals: fertilizer); Diamond Lake Park (Chemicals: herbicide & fertilizer storage); Westview Cemetery (chemicals: fertilizer); Magnolia Cemetery (chemicals: fertilizers); Cedar Grove Cemetery (chemicals: fertilizer); and Recreation Maintenance Yard (chemicals: fertilizer, pesticide, lime, weed control agents)

Inventory of such facilities will be updated annually and reported with MS4 Annual Report. Also, these facilities will be inspected annually by the AED Engineering staff using "Highly Visible Pollutant Source Inspection Form" (a copy provided in Appendix E).

3.1.8. Pesticide, Fertilizer, and Herbicide (122.26(d)(2)(iv)(A)(6))

Although application of pesticides, fertilizers, and herbicides is a potential source of pollution to storm water runoff, use of these compounds by Augusta municipal departments is limited and closely controlled. Weed control along streets and highways is generally accomplished by mowing and other mechanical means, rather than by the use of chemical applications. In the event that herbicides are needed, foliar application is used to mitigate leaching and runoff. Nuisance aquatic plants are also typically controlled via mechanical removal rather than by application of herbicides. Respective Augusta departments maintain separate inventories of chemicals stored. Augusta Employees or Augusta Contractors who apply these chemicals will be required training by the Department of Agriculture, and only those so trained are authorized to use these chemicals. A copy of training and certification of Augusta employees will be provided in each annual report.

Because soil in the region is relatively fertile and rainfall abundant, the need for fertilizer is negligible. In addition, Augusta uses native vegetation that requires minimum chemical assistance to thrive, thus limiting the potential for adverse runoff to stormwater, and minimizing maintenance and upkeep costs.

3.1.9 Training

Training and education for Augusta employees is provided on a case by case basis which is determined by the area of work and the manner in which work is being performed. Where workers require education about potential impacts of pollutants, the necessary information is conveyed to ensure the operator clearly understands the implications of storm water pollution which may result from a project such as the one being performed.

Engineering inspectors get cross training to perform all functions currently provided by the Augusta Engineering Department. Inspectors receive progressively more detailed training through short courses attended by management personnel, who in turn pass this education along to the inspectors to be included in performing their daily functions. All of the Engineering Department inspectors have received Erosion, Sedimentation and Pollution Control training and attend annual in-house training season covering topics of pollution prevention and identification of Illicit discharges.

Augusta will conduct at a minimum one training session for Engineering Inspection group and provide copy of training sign-in and Topics of material covered with annual report.

3.2 Illicit Discharge Detection and Elimination Program (122.26(d)(2)(iv)(B))

3.2.1. Legal Authority, Program Description and Administration

The Augusta Stormwater Management Ordinance (dated November 2011) regulates illicit discharges to the MS4, and this ordinance will be stringently enforced (a copy included in Appendix I). To provide for the health, safety, and general welfare of its citizens, Augusta regulates non-stormwater discharges to the MS4 to the MEP, as required by state and federal law. Objectives of the Augusta illicit discharge detection and elimination program are:

- Regulate the contribution of pollutants to the Augusta MS4 by any user
- Ensure the proper installation, operation, and maintenance of construction site BMPs
- Prohibit illicit connections and illegal discharges to the Augusta MS4
- Control discharges to the Augusta MS4 of spills, dumping or disposal of materials other than stormwater

- Establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure regulatory compliance

The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the EPD and EPA, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the Augusta MS4.

3.2.2_ Outfall Inventory/Map

Storm water MS4 outfalls and stormwater management facility outfalls will be inspected and monitored by the AED at a minimum rate of 20% of the total number of out falls per year. An inventory and map of outfalls is presented in Appendix A and Appendix B of this plan.

3.2.3. Illicit Discharge Detection and Elimination (IDDE) Plan

Illicit discharge monitoring is an ongoing program and applies to all facilities that have stormwater discharges associated with industrial activity, including construction activity. The City Administrator or his/her designee shall be permitted to enter and inspect facilities subject to regulation under this program as often as may be necessary to determine compliance with this ordinance.

- If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to Augusta.
- Facility operators shall allow Augusta ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.
- The AED shall have the right to set up on any permitted facility such devices as are necessary in the opinion of Augusta to conduct monitoring and/or sampling of the facility's stormwater discharge.
- Augusta has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.
- Any temporary or permanent obstruction to safe and easy access to the facility to be inspected *and/or* sampled shall be promptly removed by the owner at the written or oral request of the City Administrator or his/her designee and shall not be replaced. The costs of clearing such access shall be borne by the owner.
- Unreasonable delays in allowing the Augusta access to a permitted facility is a violation of a stormwater discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge stormwater associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.
- If Augusta has been refused access to any part of the premises from which stormwater is discharged, and *he/she* is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, Augusta may seek issuance of a search warrant from any court of competent jurisdiction.

Augusta will continue outfall dry-weather screening activities for the duration of this permit. Rainfall events with precipitation levels below 0.1 inches are considered dry weather events. A qualified dry weather sampling will be preceded by 72-hours of dry weather. The field screening will be conducted using a field analysis kit and observation will be logged on a form (Appendix E). No flow will be documented as "no flow observed" and flow related items will be marked as *N*/A on the form.

In the event that dry-weather discharge is noted at an outfall, AED will use following process for completing the monitoring and source determination.
Step 1: In addition to visual observations (such as Color, Odor, Oil Sheen, Floating Solids), the AED will immediately conduct onsite testing using a storm water field test kit. Flow will be tested for pH, conductivity, detergent, and fluoride. Acceptable standards for these parameters are: pH (6-8.5), conductivity (<0.250 S/cm), detergent (<0.05mg/L), and fluoride (<0.4mg.L). Not later than following day of initial inspection, AED will walk up the storm conveyance system and open up storm structures cover to investigate observed flow source. Efforts will be made to the extent possible to identify the source of flow. The source may include groundwater, lawn watering, air conditioning condensate, foundation drainage, or illicit discharges.
Step 2: In the event the source appears to be illicit, water samples will be collected and indicator water quality parameters analyzed to determine the potential source of outfall flow. These parameters include:

Parameter	Water Quality Standard *
Water temperature	± 10° C of ambient conditions
Turbidity	< 40 NTU
Conductivity	*< 0.250 S/cm*
pH	6.0 -11.0
Fluoride	< 0.4 mg/L
Detergents	*< 0.05 mg/L*

* *These standards were derived from empirical surface water quality background data collected from various springs and unimpaired stream headwaters throughout the Augusta area* in *past. It should be emphasized that these standards are only intended to trigger additional investigation of dry-weather discharges, and are not to be used as the sole basis for taking enforcement action.*

If visual and olfactory signs indicate storm and sanitary sewer mixing, a sample will be collected for Fecal Coliform (FC) laboratory testing. The sample will be delivered to Augusta POTW In-house laboratory for processing so that 6-hour holding time is not exceeded. Single maximum FC criteria of 4,000 colonies per 100 ml for any given sample will be used.

If necessary, additional follow up inspections and/or dye-tracer tests may be conducted and samples collected upstream of the outfall to track the source of the dry-weather discharge. These follow up inspections and tests will be conducted in a timely manner, but because they typically involve iterative inspections and tests to successfully track outfall source(s), a definitive schedule cannot be established. Enforcement action resulting from illicit discharges is discussed in next sub-section.

Enforcement
Whenever Augusta finds that a person has violated a prohibition or failed to meet a requirement of this program, Augusta may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

- The elimination of illicit connections or discharges;
- That violating discharges, practices, or operations shall cease and desist;

- The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property; and
- The implementation of source control or treatment BMPs.

A written warning or notice of violation will be issued with details regarding the nature of illicit connection and a schedule for response submittal including corrective action plan submittal. Such notice will be issued within 72 hours of determination of illicit source requiring Responsible Party to submit response within 10 days of receipt of the notice. If resolution is received within specified time of 10 days then written response will not be required. A definitive schedule to correct violation and follow-up inspections cannot be established due to variation in illicit source and required corrective measures. The site will be re-inspected by AED staff when the deadline for completion of correction actions specified in proposed corrective action plan is reached.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline commensurate with the scope and nature of the violation, within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, Augusta or a contractor will do the work and the expense thereof shall be charged to the violator.

Variances
The AED may grant a variance from requirements of this program if exceptional circumstances applicable to a site exists such that strict adherence to these provisions will result in unnecessary hardship and will not fulfill the intent of this program. A written request for a variance shall be required and shall state the specific variance sought and the reasons, with supporting data, a variance should be granted. The request shall include all information necessary to evaluate the proposed variance. The AED will conduct a review of the request for a variance within thirty (30) working days of receiving the request.

3.2.4 Accidental Discharges and Spills
Spill response and containment is currently managed by the Augusta Emergency Management Agency (EMA) Department and the Augusta Fire Department. The fire department maintains a separate hazardous material response unit and the EMA has an outside service on contract to assist in spill response and cleanup efforts. Both departments working through the Local Emergency Planning Committee maintain contact with local industry to ensure that all spill containment measures are maintained at levels that protect receiving waters from, unnecessary and adverse impacts.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into stormwater, the Augusta MS4, state waters, or waters of the U.S., said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.

3.2.5 Notification of Accidental Discharges and Spills
In the event of a release of non-hazardous materials, said person shall notify the authorized enforcement agency in person or by phone, facsimile or in person no later than the next business day of the nature, quantity and time of occurrence of the discharge. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the Augusta Engineering Department within three business days of the phone or in person notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an

on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years. In either case, such person shall also take immediate steps to ensure no recurrence of the discharge or spill.

To promote, publicize, and facilitate public understanding of stormwater quality issues and reporting of illicit discharges, the Augusta Engineering Department has prepared and periodically posts a number of informational flyers pertaining to storm drain protection, septic tank operation and maintenance, managing pet waste, reporting illicit discharges, lawn care, and car washing. In addition, the Augusta Engineering Department works closely with the Augusta Cares program, which was created to improve customer service to Augusta citizens by providing a customer service line whose primary function is to respond to complaints and issues for any of the Augusta government departments.

3.2.6 Proper Management and Disposal of Used Oil and Toxic Materials

Augusta Solid Waste facility (Environmental Services Department) provides used oil recycling for the residents on regular basis. Electronic and similar material recycling is offered at neighboring county recycling facility that is located close to the county lines and serves the Metro area. Augusta Utilities Fat, Oil and Grease (FOG) program periodically hold recycling day to provide convenient drop off location. Additional information is provided to residents describing the proper methods of disposal for household hazardous items, including used oil and toxic materials at Earth Day and similar events. In addition, AED is proposing periodically posting informational flyers on the Augusta website regarding storm water protection, septic system maintenance, pet waste management, and stormwater detention and retention pond maintenance.

At a minimum, one flyer per year will be posted and documentation will be provided in the annual report.

3.2.7 Sanitary Sewers Infiltration Controls

Because fecal coliform is the only pollutant with which some Augusta streams (i.e., Rocky and Butler Creeks) are impaired, the AED and AUD have initiated a close, collaborative effort to locate inflow/infiltration, isolated remaining unknown and undocumented combined sewers and sewer overflows, straight-pipes, and sections of sanitary and storm sewer pipes experiencing cross-flow problems. The AED regularly monitors and samples (if warranted) MS4 outfalls for fecal coliform, as well as responds to citizen complaints of sewage odors or spills emanating from the storm sewer system. Findings from these sampling events are discussed with AUD, which undertakes necessary efforts as soon as possible to track, locate, and eliminate the source of sewage flow into the storm system. These efforts, depending of site-specific circumstances, may include visual inspections of storm sewer junction boxes/manholes, TV inspections, smoke testing, dye-tracer testing, and/or systematic, iterative sampling and analysis of the storm sewer system for fecal coliform to pinpoint the source(s).

3.2.8 Training

AED-engineering has various level of trained staff capable of detecting unauthorized discharges in Augusta MS4 system. Engineering Inspectors and professional staff all are trained in erosion, sedimentation and pollution control management. Also stormwater quality subject matter is discussed at monthly staff meeting.

Training and education for Augusta Engineering field staff is provided on a case by case basis which is determined by the area of work and the manner in which work is being performed. Inspectors receive progressively more detailed training through short courses attended by management personnel, who in turn pass this education along to the inspectors to be included in performing their daily functions.

Augusta will conduct at a minimum one training session for Engineering Inspection group and provide copy of training sign-in and Topics of material covered with annual report.

3.3. Industrial Facility Stormwater Runoff Control (122.26(d)(2)(iv)(C))

3.3.1. Industrial Facility Inventory

An inventory of these facilities, which will be updated annually based on EPD and Augusta License and Inspection Department records, is provided in Appendix C of this plan.

3.3.2. Inspection Schedule and Protocol

At a minimum, 20% of these facilities will be inspected each year, as required by the Augusta MS4 program. These facilities will be inspected on a regular, rotating schedule such that each is inspected at least once every five years. To comply with the Augusta area-wide MS4 NPDES permit, AED personnel will conduct inspections to ensure runoff and effluent discharges from permitted industrial facilities to its storm sewer system and local streams meet applicable water quality standards and other regulatory requirements. Standards for BMPs and other stormwater runoff, soil erosion, and sediment control will be in accordance with those provided in the Manual for Erosion and Sediment Control in Georgia, Fifth Edition 2000 (Georgia Soil and Water Conservation Commission (GSWCC)) and the Georgia Stormwater Management Manual. The contents of each inspection will include, at a minimum, a review of:

- Facility map and general layout
- Environmental permits issued for the facility, permit numbers, and dates
- Water usage and disposition, including approximate number of gallons used per day for employees, boilers, cooling, washing, irrigation, industrial processes, and other activities
- Facility maintenance practices for storm drains, parking areas, and repair and maintenance areas, indoor drains, and oil/water separators
- Information about wastewater and wastewater pretreatment at the facility
- Any tests or inspections for illicit connections to the storm sewer system
- Wash water practices where vehicles and/or heavy equipment are washed, any cleaning additives used, drains in the wash area, and the use of a mobile washer
- Rooftop and air discharge equipment and their exposure to storm water runoff (i.e. pipe condensation, exposed motors, fugitive dust, etc.)
- Areas where materials are handled, including types of materials, and any best management practices employed
- Any outdoor manufacturing and storage areas including what activities take place there, what is stored there, and any best management practices employed in those areas
- Waste storage and disposal practices, including such things as dumpsters, trash compactors, waste oil, scrap metal, and any secondary containment present
- The facility's Stormwater Pollution Prevention Plan (SWPPP) will be reviewed, and topics within the document such as preventative maintenance activities, employee training, recordkeeping, and effluent/runoff sampling (if required by the facility permit) will be reviewed to ensure they are complete, accurate, and current
- AED inspectors will visually exam portions of each facility that may contain material that poses a potential threat to local water quality, including but not limited to loading docks, equipment maintenance areas, wash facilities, fuel, oil, and lubricant (new and used) storage and dispensing areas, oil/water separators, chemical storage areas, waste storage and pretreatment facilities, above ground and underground storage tanks, trash and refuse storage areas, holding and settling ponds and/or pits, battery storage areas, scrap metal areas, and outdoor manufacturing areas. In

addition, AED personnel will inspect all on-site storm water detention and retention ponds, as well as all stormwater outfalls

- At the conclusion of each inspection, AED personnel will discuss results of the inspection with appropriate facility staff, make recommendations for improvements, discuss any significant violations, and provide a copy of the inspection report for the plant files
- If significant violations are noted, AED will issue a formal notice of violation letter to the facility within three days of the inspection providing details regarding the violations, including remedial measures that must be taken to correct problems, and a schedule for completing the corrective actions

A copy of the inspection form used by AED to document industrial inspections is provided in Appendix E of this plan.

3.3.3. Industrial Site Enforcement Action

Enforcement action at deficient industrial site will follow a prescribed, progressive course of action, unless conditions are observed that pose an immediate and significant threat to human health or the environment. In this later case, the AED will immediately issue Notice of Violation including halting in question relevant industrial activities at the site until the problems are corrected. Progressive course of actions include i) Verbal Warning, ii) Notice Violation, iii) Civil and/or Criminal Procurement. These actions are further described below.

1) A verbal warning will be issued providing the facility with details regarding the nature and extent of the deficiency, corrective measures that must be taken, and a schedule to submit remedial plan. Such notice will be issued within 72 hours of determination of deficiency requiring facility to submit remedial response within 10 days of receipt of the notice. If resolution is received within specified time of 10 days then written response will not be required.
2) The site will be re-inspected by AED staff when the deadline for completion of correction actions specified in the remedial plan is reached. If the same deficiencies are still observed, a written NOV will be issued to the facility providing 5 days to initiate the corrective actions and submit completion schedule.
3) The site will be re-inspected by AED staff when the deadline for initiation of correction actions specified in the NOV is reached. If the same deficiencies are still observed, the AED will immediately issue Notice halting in question relevant industrial activities at the site until the problems are corrected.

In addition to these enforcement actions, uncorrected violations of the Augusta stormwater ordinance may be tried as a misdemeanor and upon conviction, guilty parties may be subject to penalties provided in section 1-6-1 of the Augusta Code. This code states:

"Sec. 1-6-1. *General penalty for violation of Code, etc.; continuing violations.*
Whenever in this Code or in any ordinance of Augusta-Richmond County or any rule or regulation or order promulgated by any officer or agency of Augusta-Richmond County under authority duly vested in him or if any act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or ordinance or rule, regulation or order the doing of any act is required or the failure to do any act is declared to be unlawful or an offense or a misdemeanor where no specific penalty is provided therefore, the violation of any such provision of this Code or any such ordinance, rule, regulation or order shall be punished by a fine not exceeding one thousand dollars or by imprisonment not exceeding sixty (60) days, either or both, in the discretion of the judge of the court having jurisdiction. Each day any violation of any provision of this Code or of any such ordinance or rule, regulation or order shall continue shall constitute a separate offense."

3.3.4. Educational Activities

During site inspection good housing practices are discussed with operators and fliers provided to place on bulletin board.

3.3.5. Training

Training and education for Augusta Engineering field staff is provided on a case by case basis which is determined by the area of work and the manner in which work is being performed. Inspectors receive progressively more detailed training through short courses attended by management personnel, who in turn pass this education along to the inspectors to be included in performing their daily functions. Engineering staff responsible for industrial inspections also attend stormwater seminars and frequently review material posted online.

Augusta will conduct at a minimum one training session for Engineering Inspection group involved in industrial facility inspections and provide copy of training sign-in and Topics of material covered with annual report.

3.4. Construction Site Management Control (122.26(d)(2)(iv)(D))

3.4.1. Legal Authority

All new developments, both commercial and residential, are required to manage runoff quality and maintain runoff release rates at levels which existed prior to the development. This requirement is strictly enforced, which maintains discharge velocities and provides mitigation for water quality degradation by retaining storm water flows and allowing solids to settle rather than being released to receiving waters. The Director of the Planning and Development Department (APDD) regulates the development of land to protect the community and natural resources from the potential negative impacts of converting land from its natural state to urban land uses. The Augusta Engineering Department enforces compliance with applicable land development requirements. The Augusta has several ordinances that regulate land development and construction activities. Key regulations are: Comprehensive Zoning Ordinance, Soil Erosion, Sedimentation and Pollution Control Ordinance, Stormwater Management Ordinance; Flood Mitigation Ordinance, Site Plan Regulations, Tree Ordinance, and Green Space Program.

3.4.2. Site Plan Review

The AED and APDD regulate the preparation of site development plans, establish minimum design standards for site development, set forth procedures to be followed in applying these regulations, provides penalties for violations of these regulations, and sets forth other matters pertaining to the development of land. Currently Augusta Engineering Department has over fifteen certified professionals (P.E., PLS, Level II Plan Designers, Level II Plan Reviewers and Certified Inspectors) that are involved in development plan review and development inspection program.
Augusta site plan regulations have been adopted to:

- Encourage development of an economically sound stable community, so as to help conserve and protect the natural, economic, and scenic resources of Augusta, Georgia
- Protect Augusta, Georgia from the potential negative impacts of converting land from its natural state to urban land uses
- Assure safe and convenient traffic access and circulation, and to minimize the impact of land development on traffic safety and congestion
- Ensure that all buildings and other construction within the scope of these regulations are provided with adequate fire protection and are accessible by all types of emergency vehicles
- Assure that the aesthetic qualities of the community are not degraded by the development of land

- Encourage the wise development of the community in harmony with the Comprehensive Development Plan

The Augusta Engineering Department has adopted several measures to ensure that construction is consistent with the approved development plan. These measures include a mandatory preconstruction conference held by the City Engineer or his designated representative and periodic inspections during the construction phase. The objective of the preconstruction conference is to make sure that the parties involved (developer, contractors & engineers) clearly understand all the requirements. Periodic inspections made by the Planning Commission, the Engineering Department and other departments and agencies of Augusta ensure that development is constructed per the approved plan.

Development plan review and land disturbance activities permit information will be transmitted to GA EPD on annual basis as part ofMS4 annual report submittal.

3.4.3. Construction Site Inspection

Augusta Engineering Department staff periodically inspects the sites of land disturbing activities for which permits have been issued to determine if the activities are being conducted in accordance with the erosion, sedimentation and Pollution Control plan and whether the measures are effective in controlling soil erosion and sedimentation, and managing stormwater quality as designed. AED has six engineering inspectors and three professional staff on board whose primary responsibility is to conduct site inspections and enforce applicable development codes. In additional building inspectors are also trained to identify erosion and sedimentation issues and notify AED to follow up. Priorities for inspecting sites are developed based on the potential risk to receiving streams. Although the above criteria describe the high risk areas, all things being equal, it has been determined through experience that the willingness of developers and contractors to provide and properly install structural control measures to prevent offsite migration of sediment is the criteria which provides the greatest benefit to receiving waters. Active construction sites are inspected on a periodic schedule at least once every other week. Sensitive sites and larger developments are inspected at higher frequency. Sites with high potential to impact the environment are inspected more frequently, some on a daily schedule.

Any action or inaction which violates the provisions of the Augusta development regulations may be subject to the enforcement actions. As a first step a Notice of Violation is issued. If the AED staff determines that a responsible party has failed to comply with the terms and conditions of the approved plans, it issues a written Notice of Violation to such responsible party. The Notice of Violation contains a statement specifying the nature of the violation, a description of the remedial measures necessary to bring the action or inaction into compliance and the date for the completion of such remedial action, and a statement of the penalty or penalties that may be assessed against the party to whom the Notice of Violation is directed. The second step in the enforcement process is taken in the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, anyone or more of the actions or penalties such as Stop Work Order, Withhold Certificate of Occupancy, Suspension, Revocation or Modification of Permit and Civil Penalties could be taken or assessed against the party to whom the Notice of Violation was directed.

Augusta's Erosion and Sedimentation Program is periodically reviewed by the Georgia Soil and Water Conversation Commission. District Assessment Team (OAT) completed its latest review on June 11, 2011. The OAT, using a rating system of Exceptional, Passing, Needs Plan for Improvement, and Failed, concluded that Augusta's erosion and sedimentation control program is classified as Exceptional. The DAT rated the program based on the following criteria: program administration and record keeping, qualification and training of the E&SC staff, complaint resolution, inspection frequency and level of enforcement, and site conditions.

3.4.4. Construction Site Enforcement Action

Any action or inaction which violates the provisions of the City development regulations may be subject to the enforcement actions. These enforcement actions may include:

- Verbal warning
- Notice of violation
- Stop work order
- Civil and/or criminal prosecution

3.4.5. Education/Training

Engineering Inspection group hold a current and valid Level lB Certified Inspector card issued by the GSWCC. AED personnel responsible for reviewing and approving site plans possess a current and valid GSWCC Level II Design Professional or Planner Reviewer card. All certified staff attends refresher courses at a frequency required under GSWCC certification.

AED construction inspectors get cross training to perform all functions currently provided by the Augusta Engineering Department. Inspectors receive progressively more detailed training through short courses attended by management personnel, who in turn pass this education along to the inspectors to be included in performing their daily functions. AED inspectors have received required ES&PC training. A copy of training and certification of engineering inspectors will be provided in each annual report.

3.5. Highly Visible Pollutant Source (HVPS) Stormwater Runoff Control (122.26(d)(2)(iv)(C))

3.5.1. HVPS Facility Inventory

An inventory of these facilities, which will be updated annually based on EPD and Augusta License and Inspection Department records, is provided in Appendix D of this plan. The AED has compiled a list of 331 highly visible pollutant sources (Appendix D), and will inspect a minimum of 20% of these facilities each year.

3.5.2. Inspection Program

At a minimum, 20% of these facilities will be inspected each year, as required by the Augusta MS4 program. These facilities will be inspected on a regular, rotating schedule such that each is inspected at least once every five years. Field inspections will include visual observation of each site, with particular attention paid to such items as:

- Leaking trash bins, drums, or other waste storage containers
- Leaking pipes, hoses, tanks, or other chemical conveyances
- Stained pavement, gravel, or soil
- Distressed vegetation
- Sheens, stains, or other evidence of improper discharges to storm drains

In addition to these inspections, many of the facilities included in this list have discharge permits with the Augusta waste water treatment plant. The AED will work closely with the plant to determine when problems occur at these businesses, and to effectively and efficiently correct these problems.

A copy of the inspection form used by AED to document HVPS source inspections is provided in Appendix E of this plan.

3.5.3. Enforcement Procedures

Enforcement actions for deficiencies at highly visible pollutant source sites are similar to those for violations observed at development of new industrial sites and construction sites (with the exception of stop work orders). These actions include:

- Verbal warning
- Notice of violation
- Civil and/or criminal prosecution

In addition to these enforcement actions, uncorrected violations of the Augusta stormwater ordinance may be tried as a misdemeanor and upon conviction, guilty parties may be subject to penalties provided in section 1-6-1 of the Augusta Code. This code states:

"Sec. 1-6-1. *General penalty for violation of Code, etc.; continuing violations.*
Whenever in this Code or in any ordinance of Augusta-Richmond County or any rule or regulation or order promulgated by any officer or agency of Augusta-Richmond County under authority duly vested in him or if any act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or ordinance or rule, regulation or order the doing of any act is required or the failure to do any act is declared to be unlawful or an offense or a misdemeanor where no specific penalty is *provided therefore, the violation of any such provision of this Code or any such ordinance, rule, regulation or order shall be punished by a fine not exceeding one thousand dollars or by imprisonment not exceeding sixty (60) days, either or both, in the discretion of the judge of the court having jurisdiction. Each day any violation of any provision of this Code or of any such ordinance or rule, regulation or order shall continue shall constitute a separate offense."*

3.5.4. Educational Activities

During site inspection good housing practices are discussed with operators and fliers provided to place on bulletin board. To increase awareness among facility operators, AED has developed a number of educational flyers for distribution (Appendix G). AED staff also is available to answer citizens' and facility operators' questions regarding municipal ordinances and stormwater regulations.

3.5.5. Training

AED-engineering has various levels of trained staff capable of detecting unauthorized discharges in Augusta MS4 system. Engineering Inspectors and professional staff are all trained in erosion, sedimentation and pollution control management. Also stormwater quality subject matter is discussed at monthly staff meeting: Staff is encouraged to attend professional workshops and symposiums to develop better understanding of stormwater issues.

Augusta will conduct at a minimum one training session each year for Engineering Inspection group and provide copy of training sign-in and Topics of material covered with annual report.

3.6. Enforcement Response Plan (ERP)

This ERP describes the measures available to Augusta to exercise its legal authority to enforce provisions of its stormwater management and land developments rules and regulations, and to encourage timely response by a discharger. Level of enforcement action varies depending on nature and extent of observed unauthorized activity. Enforcement action may be Verbal Warning, Written Notice of Violation, or Citation. These actions are defined as follow:

Verbal Warning: A notice consisting of personnel contact or telephone call to notify a Discharger of a minor violation in order to seek explanation, suggest the exercise of more care or to notify the violator that subsequent violation of same type will be dealt with more seriously. A verbal warning may be used to correct minor inadvertent noncompliance. A written record of the verbal warning shall be made

in the form of a memorandum to the file, an on-site inspection form or a phone call log.

Written Warning or Notice of Violation: A written notice to the Discharger that the Augusta has observed a violation of Augusta's Stormwater Management Ordinance outlining expectations for the noncompliance to be corrected and requesting a written explanation from the responsible party(ies). A Notice of Violation typically includes a statement regarding additional enforcement actions which may be taken if the responsible party(ies) fails/fail to make necessary correction in a timely manner.

Citation: When a responsible party(ies) or potentially responsible party(ies) violates/violate terms of Augusta's Stormwater Management Ordinance and when other actions taken to facilitates compliance have failed, or where severity of the violation warrants this action, a citation to the Court having Jurisdiction will be issued to the responsible party(ies).

Type of Enforcement Actions:

3.6.1 lDDE Enforcement

Augusta Stormwater Management Ordinance and Augusta Stormwater Management Plan Technical Manual manage illicit discharges to the MS4, and these ordinances will be stringently enforced. To provide for the health, safety, and general welfare of its citizens, ARC regulates non-stormwater discharges to the MS4 to the MEP, as required by state and federal law. Objectives of the ARC illicit discharge detection and elimination program are:

- Regulate the contribution of pollutants to the ARC MS4 by any user
- Ensure the proper installation, operation, and maintenance of construction site BMPs
- Prohibit illicit connections and illegal discharges to the ARC MS4
- Control discharges to the ARC MS4 of spills, dumping or disposal of materials other than stormwater
- Establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure regulatory compliance

Whenever the City Administrator or his/her designee finds that a person has violated a prohibition or failed to meet a requirement of this program, the City Administrator or his/her designee shall order compliance by verbal warning or written notice of violation to the responsible person.

The verbal warning will be issued when illicit discharge or activity can be addressed at the time of site visit or within 24-hours of its discovery. Augusta staff investigating violation discusses observed conditions with the Responsible Party and provides information on actions and activities that can help eliminate immediate concerns. If, however, the observed situation is not resolved to the Augusta staff's satisfaction, the staff will issue written notice of violation.

A written warning or notice of violation is issued when observed conditions suggest that corrective resolution is not feasible within 24-hours of illicit discharge or activity discovery.

The written warning or notice of violation shall contain:

- The name and address of the owner or applicant
- The address when available or a description of the building, structure or land upon which the violation is occurring
- A statement specifying the nature of the violation
- A description of the remedial measures necessary to bring the development activity into compliance and a time schedule for the completion of such remedial action

- A statement of the penalty or penalties that shall or may be assessed against the person to who the NOV is directed

Such notice may require:

- The performance of monitoring, analyses, and reporting
- The elimination of illicit connections or discharges
- That violating discharges, practices, or operations shall cease and desist
- The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property
- Payment of a fine to cover administrative and remediation costs
- The implementation of pollution prevention practices

A written warning or notice of violation will be issued with details regarding the nature of illicit connection and a schedule for response including corrective action plan submittal. Such notice will be issued within 72 hours of determination of illicit source requiring Responsible Party to submit response within 10 days of receipt of the notice. If resolution is received within specified time of 10 days then written response will not be required. A definitive schedule to correct violation and follow-up inspections cannot be established due to variation in illicit source and required corrective measures. The site will be re-inspected by AED staff when the deadline for completion of correction actions specified in proposed corrective action plan is reached.

Any person receiving a NOV may appeal the determination of the City Administrator or his/her designee. The notice of appeal must be received by the City Administrator or his/her designee within fifteen (15) days from the date of the NOV. Hearing on the appeal before the Board of Commissioners shall take place within thirty (30) days from the date of receipt of the notice of appeal. The decision of the Board of Commissioners shall be final.

If the violation has not been corrected pursuant to the requirements set forth in the NOV, or, in the event of an appeal, within thirty (30) days of the Board of Commissioners' ruling upholding the decision of the City Administrator, then the City Administrator or his/her designee shall enter upon the subject private property and is authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above. Within thirty (30) days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The notification will include copies of all invoices paid by ARC, and a log of all hours spent by government personnel. If the amount due is not paid within thirty (30) days of receipt of the notification, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment. Any person violating any of the provisions of this article shall become liable to ARC by reason of such violation.

In addition to the enforcement processes and penalties provided this chapter, any condition caused or permitted to exist in violation of any of the provisions of this ordinance is deemed a threat to public health, safety, and welfare, and is declared a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

The AED may grant a variance from requirements of this program if exceptional circumstances applicable to a site exists such that strict adherence to these provisions will result in unnecessary hardship and will not fulfill the intent of this program. A written request for a variance shall be required and shall state the

specific variance sought and the reasons, with supporting data, a variance should be granted. The request shall include all information necessary to evaluate the proposed variance. The AEO will conduct a review of the request for a variance within thirty (30) working days of receiving the request.

Tracking of enforcement action will be done electronically and reported annually with respective MS4 Annual Report. Tracking document consists of a copy of initial inspection report, follow up actions and closing resolution.

3.6.2 Construction Site Enforcement Action

Any action or inaction which violates the provisions of the Augusta development regulations may be subject to the enforcement actions. As a first step a Notice of Violation is issued. If the AED staff determines that a responsible party has failed to comply with the terms and conditions of the approved plans, it issues a written Notice of Violation to such responsible party. The Notice of Violation contains a statement specifying the nature of the violation, a description of the remedial measures necessary to bring the action or inaction into compliance and the date for the completion of such remedial action, and a statement of the penalty or penalties that may be assessed against the party to whom the Notice of Violation is directed. The second step in the enforcement process is taken in the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, anyone or more of the actions or penalties such as Stop Work Order, Withhold Certificate of Occupancy, Suspension, Revocation or Modification of Permit and Civil Penalties could be taken or assessed against the party to whom the Notice of Violation was directed. Any action or inaction which violates the provisions of the City development regulations may be subject to the enforcement actions. These enforcement actions may include:

- Verbal warning
- Notice of violation
- Stop work order
- Civil and/or criminal prosecution

These actions are further described below

1) A verbal warning will be issued providing the developer/builder with details regarding the nature and extent of the deficiency, corrective measures that must be taken, and a schedule to implement these corrective measures. Such notice will be issued within 24 hours of determination of deficiency.
2) The site will be re-inspected by AED staff when the deadline for completion of correction actions specified in the verbal warning is reached. If the same deficiencies are still observed, a written NOV will be issued to the responsible party providing 7 days to initiate the corrective actions and submit completion schedule.
3) The site will be re-inspected by AED staff when the deadline for initiation of correction actions specified in the NOV is reached. If the same deficiencies are still observed, the AED will immediately issue STOP Work Order halting land disturbing activities at the site until the problems are corrected. The Stop Work Order will also be issued if:
    a) Land disturbing activity without LDA (Land Disturbing Activity) Permit;
    b) Significant amount of sediment discharged to State Waters
    c) Failure to maintain a stream buffer

In addition to these enforcement actions, uncorrected violations of the Augusta stormwater ordinance may be tried as a misdemeanor and upon conviction, guilty parties may be subject to penalties provided in section 1-6-1 of the Augusta Code.

"Sec. 1-6-1. *General penalty for violation of Code, etc.; continuing violations.*
Whenever in this Code or in any ordinance of Augusta-Richmond County or any rule or regulation or order promulgated by any officer or agency of Augusta-Richmond County under authority duly vested in him or if any act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or ordinance or rule, regulation or order the doing of any act is required or the failure to do any act is declared to be unlawful or an offense or a misdemeanor where no specific penalty is *provided therefore, the violation of any such provision of this Code or any such ordinance, rule, regulation or order shall be punished by a fine not exceeding one thousand dollars or by imprisonment not exceeding sixty (60) days, either or both, in the discretion of the judge of the court having jurisdiction. Each day any violation of any provision of this Code or of any such ordinance or rule, regulation or order shall continue shall constitute a separate offense."*

Tracking of enforcement action will be done electronically and reported annually with respective MS4 Annual Report. Tracking document consists of a copy of initial inspection report, follow up actions and closing resolution.

3.6.3 Industrial Site Enforcement

Enforcement action at deficient industrial site will follow a prescribed, progressive course of action, unless conditions are observed that pose an immediate and significant threat to human health or the environment. In this later case, the AED will immediately issue Notice of Violation including halting in question relevant industrial activities at the site until the problems are corrected. Progressive course of actions include i) Verbal Warning, ii) Notice of Violation, iii) Civil and/or Criminal Procurement. These actions are further described below.

Verbal Warning:

The verbal warning is issued for minor violations which would not cause harm to the environment and a phone call or informal meeting may be sufficient to obtain the desired compliance. Augusta staff investigating violation discusses observed conditions with the Responsible Party and provides information on actions and activities that can help eliminate immediate concerns. Phone call or informal discussion notes are kept summarizing the discussion. A copy of notes is placed in Industrial Inspection file. In general noted deficiency or violation is corrected within 24- to 48-hours of its notification. If, however, the observed situation is not resolved to the Augusta staff's satisfaction, the staff will issue written notice of violation.

Notice of Violations:

1) A written notice is issued providing the facility with details regarding the nature and extent of the deficiency, corrective measures that must be taken, and a schedule to submit remedial plan. Such notice will be issued within 72 hours of determination of deficiency requiring facility to submit remedial response within 10 days of receipt of the notice. If resolution is received within specified time of 10 days then remedial response will not be required.
2) The site will be re-inspected by AED staff when the deadline for completion of correction actions specified in the remedial plan is reached. If the same deficiencies are still observed, a written NOV will be issued to the facility providing 5 days to initiate the corrective actions and submit completion schedule.
3) The site will be re-inspected by AED staff when the deadline for initiation of correction actions specified in the NOV is reached. If the same deficiencies are still observed, the AED will immediately issue Notice halting in question relevant industrial activities at the site until the problems are corrected.

Civil and/or Criminal Procurement:

In addition to aforementioned enforcement actions, uncorrected violations of the Augusta stormwater ordinance may be tried as a misdemeanor and upon conviction, guilty parties may be subject to penalties provided in section 1-6-1 of the Augusta Code.

"Sec. 1-6-1. *General penalty for violation of Code, etc.; continuing violations.*
Whenever in this Code or in any ordinance of Augusta-Richmond County or any rule or regulation or order promulgated by any officer or agency of Augusta-Richmond County under authority duly vested in him or if any act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or ordinance or rule, regulation or order the doing of any act is required or the failure to do any act is declared to be unlawful or an offense or a misdemeanor where no specific penalty is *provided therefore, the violation of any such provision of this Code or any such ordinance, rule, regulation or order shall be punished by a fine not exceeding one thousand dollars or by imprisonment not exceeding sixty (60) days, either or both, in the discretion of the judge of the court having jurisdiction. Each day any violation of any provision of this Code or of any such ordinance or rule, regulation or order shall continue shall constitute a separate offense."*

Tracking of all enforcement action will be done electronically and reported annually with respective MS4 Annual Report. Tracking document consists of a copy of initial inspection report, follow up actions and closing resolution.

3.6.4 **HVPS** Site **Enforcement**

Enforcement actions for deficiencies at highly visible pollutant source sites are similar to those for violations observed at development of new industrial sites and construction sites (with the exception of stop work orders). These actions include:

- Verbal warning
- Notice of violation
- Civil and/or criminal prosecution

In addition to these enforcement actions, uncorrected violations of the Augusta stormwater ordinance may be tried as a misdemeanor and upon conviction, guilty parties may be subject to penalties provided in section 1-6-1 of the Augusta Code.

Tracking of enforcement action will be done electronically and reported annually with respective MS4 Annual Report. Tracking document consists of a copy of initial inspection report, follow up actions and closing resolution.

3.7. Monitoring of Discharges to Impaired Waterbodies

The following streams reaches with Augusta are on the current 303(d) list (2012 list) of impaired water bodies that do not meet their intended uses. Each reach is listed as having a recreational use and the only contaminant of concern in each stream is fecal coliform. Historically leaky sewers and stormwater discharges from urban land uses are identified as the most likely cause of elevated FC levels. However, recent studies in other localities indicate that wildlife and other non-human sources could also be significant contributors.

Stream	Reach	Length (Miles)
Rocky Creek	State Road 56 (Mike Pedget) To New Savannah Road	2
Butler Creek	Boardman's Pond to Savannah River	12

In addition to fecal coliform. Rocky Creek from Headwater to SR 56 is also listed as impaired for macroinvertebrates. However, primary effort will be to focus on fecal coliform.

Locations of these impaired stream reaches, as well as stormwater outfalls and planned sampling locations are illustrated in figures in Appendices F.

Control Measures: Fecal Coliform (FC) is the only pollutant that appears to be of concern in two Augusta's creeks. Historically leaky sewers are identified as the most likely cause of elevated FC levels. However, recent studies indicate that wildlife and other non-human sources could also be significant contributors. Augusta has undergone significant efforts in recent years to separate known combined sewers system. Efforts are underway by Augusta Utilities Department to replace aging sewer conveyance system, address inflow/infiltration issues and separate any remaining isolated combined sewers (if discovered). It is ongoing process and efforts completed will be reported yearly with MS4 report.

Based on assessment of gathered data and ongoing assessment efforts, it is our professional opinion that in-progress efforts such as replacement of aging sanitary sewer, separation of combined sewer (as soon it is discovered), and assessment of septic service area are cost effective control measures addressing Fecal Coliform presence in Augusta streams. Augusta will continue to use illicit discharge monitoring as a primary tool for detecting seepage from sanitary sewers to the sewer system. Augusta will also continue sampling and data gathering to identify hot spots and associated sources and accordingly developed source specific corrective measures. Progress will be reported with MS4 annual report.

Monitoring and Effectiveness Assessment

The single most important measure of success of this program is reducing the concentration of fecal coliform in Rocky and Butler creeks to levels consistently below those specified by the EPD. Currently those thresholds are:

- Single sample -4,000 colony forming units per 100 milliliters (cfu/100 ml)
- Geometric mean (n=4) from May through October-200 cfu/ 100 ml
- Geometric mean (n=4) from November through April -I ,000 cfu/100 ml

Samples will be collected at each of the locations monthly. In addition, four samples will be collected from each location within a 30-day period once during each calendar quarter so that four geometric means per year can be calculated. These quarterly sampling events will not overlap the months of April/May or October/November, due to changes in the in-stream water quality standards for bacteria. Quarterly sampling will be conducted in accordance with the EPD *Guidance on Submitting Water Quality Data for Use by the Georgia Environmental Protection Division In 305(b)l303(d} Listing Assessments (EPD 2002).*

To this end, in-stream water quality data, as established by sampling and laboratory analysis, will be tracked to determine trends in each creek. Specific methods of sampling, laboratory methods, and sample locations are presented in Appendix F.

Collected data and its assessment summary will be reported with MS4 annual report. Presented summary will include water quality trend and suggested changes in assessment monitoring for possible source targeting.

3.8. Public Education

Training videos regarding stormwater pollution prevention will be shown to Augusta personnel involved in stormwater management and land development. A copy of the training syllabus and personnel attendance sheets will be included with each annual MS4 report. This education of in-house staff will enhance communication with and education of land development firms and contractors when AED inspectors oversee activities at construction sites. Other efforts include ongoing activity of bring stormwater management facilities into compliance with local ordinances. Periodically letters are mailed to owners of all private and commercial ponds on record informing them that they own a pond, and what their responsibilities are to ensure compliance with the Augusta stormwater ordinance. Educational material developed by AED will be posted at web and periodically mailed as utility bill insert. At a minimum one public education activity such as flyer web posting or utility insert be performed by the AED during each reporting year and reported with respective annual MS4 report. Such activity will be tracked keeping record of material web posted material and webpage print out and material distributed. Educational material developed by AED is presented in Appendix G.

In addition, other activities will be performed in association with Southeastern Natural Science Academy (SNSA). Augusta Engineering Department is using SNSA as an extension for public education activities. Augusta funded and supported development of the SNSA (Phinizy Swap Nature Park). SNSA facility is located at Augusta owned parcel and Augusta provides continuous support to the facility. Augusta Utilities Department and Augusta Engineering Department are financially contributing to carry out some of the activities by the SNSA. The 1100 acre Nature Park makes up to 7,000 acres of Phinizy Swamp and is free to the public. The Phinizy Swamp provides a unique environment to educate the public concerning water quality degradation, the impact of nonpoint sources of pollution and the treatment achieved by the natural systems. Classes, tours and workshops are held at the Phinizy Swamp Nature Park. There are around 40,000 visitors annually. This facility provides a unique environment to educate the public concerning water quality degradation, the impact of nonpoint sources of pollution, and the treatment achieved by preserving and maintaining natural ecosystems. See Appendix H – for derails of activities (including Public Education) carry out by the Southeastern Natural Science Academy.

Augusta is proposing to continue aforementioned activities and report relevant activities completed during reporting period with respective MS4 annual report

3.9. Public Involvement

Augusta has established partnership with several local area groups. As a part of Green Initiative, these groups adopted several road segments and recently completed replacing concrete Median with vegetative landscape at three primary road corridors leading to the city (Wheeler Road, St. Sebastian Way. Gordon Hwy). They are playing leading role in regular maintenance activities at respective adopted road section. Similar another pubic involvement project is in planning for 2012-2013 period. Other focused activities include holding or facilitating Special Day events such as Augusta Living Green Day that includes compost bin and rain barrel sale plus Green Vendors and Recycling opportunities. Approximately 1000 people attended this event in 2011.

A minimum one public activity such as Augusta Living Green Day, Earth Day, Arbor Day or Augusta Gateway Landscaping Initiative will be performed during each reporting year and reported with respective annual MS4 report. Such activity will be tracked photographically or keeping a record of material / flyer distributed or sign-up sheets.

In addition, Public Involvement other activities will be performed in association with Southeastern

Natural Science Academy (SNSA). The Academy carries out variety of public involvement programs in Greater Augusta Area. The Academy Comprehensive Document is attached for information purposes only (Appendix H). Augusta Engineering Department is using SNSA as an extension for public Involvement activities. Augusta funded and supported development of the SNSA (Phinizy Swap Nature Park). SNSA facility is located at Augusta owned parcel and Augusta provides continuous support to the facility. Augusta Utilities Department and Augusta Engineering Department are financially contributing to carry out some of the activities by the SNSA. SNSA and AED are developing the Creek Walk Community Involvement Program. The program will be composed of a short presentation, creek walk and pre-post survey. Such activities will be tracked photographically or keeping a record of material / flyer distributed or sign-up sheets and reported with respective annual MS4 report.

3.10. Post-Construction

3.10.1 Post Construction Stormwater Control

Ordinance Overview: Control over significant new development is largely a function of legal controls and review of site and development plans. All new developments are required by the Augusta Land Subdivision regulations, Augusta Site Plan regulations, Augusta Stormwater Management ordinance, and Augusta Soil Erosion, Sedimentation and Pollution Control ordinance (See Section 3.1.3 for description of referred regulations & ordinances) to maintain runoff release rates at pre-development levels and manage runoff quality. This requirement is strictly enforced, which maintains discharge velocities and provides mitigation for water quality degradation by retaining stormwater flows and allowing solids to settle rather than being released to receiving waters. More stringent requirements are in-place for development in Special Consideration Basins such as Rae's Creek Basin and Rocky Creek Basin. The Tree Ordinance requires preservation or planting of trees, establishing greenspace, and establishing of a street yard in conjunction with all new development.

The Augusta has a Comprehensive Plan in place to manage land use and zoning. The Plan is updated periodically. The current plan was adopted in 2008. This Comprehensive Plan is a long-range plan for managing and guiding Augusta's development over the next 20 years. The Plan examines the existing conditions affecting development, enumerates the needs and goals for the future development of the City, and spells out the strategy for addressing needs and achieving goals. The elements of the Plan include Population, Housing, Economic Development, Transportation, Community Facilities and Services, Historic Resources, Natural Resources/Greenspace Program, and Land Use. The Natural Resources/Greenspace Program includes an inventory of natural and environmentally sensitive resources in the City Addressing such topics as topography, soils, agricultural land and forestland, air quality and water resources. The City's Greenspace Program is also integrated into this element of the plan.

Augusta, Georgia codes provide unique opportunity to the development community by offering "Conservation Subdivision" approach to protect natural resources including surface water quality. Also Augusta Engineering Department applies case by case approach to approve LID development. This approach is applied due to lack of site specific data that can be used across the board.

Performance Standards: New development & redevelopment plans are submitted to the Augusta-Planning and Development Department for project approval. The development plans are reviewed by the City staff to ensure that the proposed development conforms to all provisions of the Comprehensive Zoning Ordinance including land use, buffers, and other features regulated by the Zoning Ordinance. Design guidelines and construction standards for new development and redevelopment are provided by the Augusta Development Document. This includes Comprehensive Zoning Ordinance, Land Subdivision Regulations, Site Plan Regulations, Stormwater Ordinance, Stormwater Management Plan Technical Manual, Street & Road Design Technical Manual, Tree Ordinance, Flood Damage Prevention Ordinance,

Soil Erosion, Sediment Control and Pollution Control Ordinance, Grading Ordinance, Groundwater Recharge Area Protection Ordinance, Water Supply and Watershed Ordinance, Augusta Utilities Department Design Standards and Right-of-Way Encroachment for Utilities Guidelines.

In addition to addressing the issues that deal with flood plain and soil erosion and sediment control, the development regulations require that the developer submit Storm water Management Plan, a hydrology study and a descriptive note providing BMP information for review by the City Engineer. The hydrology report included in the development plan is prepared for the maximum storm water release rate, based on a 2-year, 30-minute storm with a maximum runoff coefficient of 0.30. Storm water detention is based on a 50-year, 30-minute storm using development runoff rate. Detention capacity must accommodate minimum 30-minute retention for the storm water runoff greater than the maximum release rate. Stormwater management design for submitted projects will be assessed using Georgia Stormwater Design Manual or Augusta Technical Design Manual and associated guidance documents prepared by Low Impact Development Center, NCSU Stormwater Engineer Group or other similar entities.

All stormwater runoff shall be adequately treated prior to discharge The storm water management system shall be designed to capture and treat the water quality treatment of volume, which is defined as the runoff volume resulting from the first 1.2 of rainfall from a new Development that creates or adds 5,000 square feet or greater impervious surface area, or that involve land disturbing activity of 5,000 square feet of land or greater, Or redevelopment that creates or adds 5,000 square feet or greater impervious surface area, or that involves land disturbing activity of one acre of land or greater.
All existing off-site drainage ditches, with profiles, storm structures, and flow capacities are also required to be shown on the plans and included in the hydrology report. Flow calculations for all drainage systems, including street sections are to be included. Calculations are made to show maximum in-take of all storm traps. Some of the storm water design alternatives are as follows:

- Pipe networks shall be designed to carry not less than the storm water from a rainfall expected to occur once in 25 years (25-year storm).
- Retention ponds or containment areas shall be designed based on a 50-year storm with stage releases at 2, 10, 25, and 50 years. Stage releases may be limited by downstream structures.
- At the option of the developer, downstream structures may be replaced to accommodate stage release or the capacity of the pond increased; and the retention facility shall include an emergency spillway to accommodate the 100-year storm for the entire tributary drainage.

The City has adopted several measures to ensure that construction is consistent with the approved development plan. These measures include a mandatory preconstruction conference held by the City Engineer or his designated representative and periodic inspections during the construction phase. The objective of the preconstruction conference is to make sure that the parties involved (developer, contractors & engineers) clearly understand all the requirements. Periodic inspections made by the Augusta Engineering Department and other departments and agencies of the City ensure that development is constructed per the approved plan.

3.10.2 Green Infrastructure and Low Impact Development (GI/LID)

3.10.2.1 Ordinance Review / Legal Authority:

The Augusta Engineering Department and the Augusta Planning and Development Department have begun efforts to actively encourage local developers to utilize green infrastructure practices. Personnel from these departments have visited other communities with active Low Impact Development (LID) and Leadership in Energy and Environmental Design (LEED) programs to observe firsthand how these programs are administered and operated. In addition, these same personnel have attended several

workshops and seminars regarding green infrastructure, Low Impact Development (LID), No Adverse Impact (NAI), and sustainability.

In 2003, The Augusta Planning Commission (formerly known as Augusta-Richmond County Planning Commission) instituted a "Conservation Subdivision" amendment to their Comprehensive Zoning Ordinance to promote conservation of sensitive areas such as wetlands and floodplains. Additionally, the Augusta Flood Damage and Prevention Ordinance exceeds the minimum standards of the National Flood Insurance Program (NFIP) and again, encourages preservation of or minimal impact to floodplain areas.

Augusta ordinances have been reviewed to ensure contents of these regulations do not prohibit or discourage the use of LID or LEED practices, and the results of that review indicate they do not. Ordinances review was completed in 2012 using Center for Watershed Protection "Code and Ordinance Worksheet (COW)". The COW allows an in-depth review of the standards, ordinances, and codes that shape how development occurs in local communities. Augusta assessment score is 81 and is within acceptable standards per COW.

3.10.2.2 Techniques and Structures

Augusta's program is geared towards successful outcomes through flexible implementation of design alternatives. Augusta crosses two physiographic provinces with widely varying hydrologic characteristics and soil types. As such, we have adopted the approach that each Low Impact Land Development Plan is unique and is driven primarily by site-specific engineering constraints. Submittals are reviewed and approved on a case by case basis. Our observation is that "Green Infrastructure" submittals are targeted primarily to satisfy Leadership in Energy and Environmental Design (LEED) requirements. Augusta has developed a program that consists of incorporating technical manuals listed below by reference. Such an approach provides guidance documents but also flexibility to develop site specific techniques that will provide superior performance. Augusta requires design engineers to use either the Augusta Stormwater Technical Design Manual, Georgia Stormwater Management Manual, or the following guidance documents for designing Green Infrastructure/Low Impact Development (GI/LID). These documents will serve as the guidance structure for GI/LID techniques and GI/LID Program. Needed modifications, if any, of the proposed program will be submitted with MS4 annual reports for EPD review and approval. The design manuals included by reference are:

i) City of Portland Stormwater Management Manual -(Green Streets)
   Guidance for vegetated surface facilities to treat and infiltrate stormwater on the property where the stormwater runoff is created
ii) Puget Sound LID Technical Guidance Manual
   Guidance for assessment and design of Urban and Suburban development
iii) San Diego LID Handbook (Pervious Asphalt, Planter Detail and notes)
   Guidance for Integrated Management Practice
iv) Low Impact Development Center (templates for rain gardens)
   Guidance for designing rain gardens
v) LID-stormwater.net (permeable pavement specs, soil amendments specs, bioretention specs)
   Guidance for designing various GI/LID techniques
vi) NCSU Stormwater Engineering Group (level spreaders, bioretention, wetlands, permeable pavement)
   Guidance for designing various GI/LID techniques

All aforementioned guidance documents will be either posted or linked at Augusta Engineering web page to ensure access to the latest versions.

Applicable sections of these documents are provided as an Appendix (DVD- GI/LID Guidance Document) for EPD review.

3.10.2.3/.4 Inventory and Maintenance Inspection

Augusta, GA is proposing to develop GI/LID inventory using existing information gathering process (through development as-built plans). The inventory of public and privately owned GI/LID structures will be submitted with MS4 2014-2015 annual report. Data will be updated annually and submitted with MS4 respective annual report.

Since the design and function of each GI/LID structure varies, in our professional opinion, a single maintenance plan will not be a reliable approach to ensure that these structures are functioning as designed. Therefore, Augusta has adopted a dynamic process. As part of the development plan approval process, Augusta is requiring the design engineer (Engineer of Record) / Owner to submit a maintenance plan and a maintenance agreement for their proposed GI/LID BMP. The maintenance agreement, in addition to other tools available to Augusta, will serve as the legal instrument to enforce maintenance-related compliance. An example of the process that Augusta has adopted is provided as Appendix (DVD-GI/LID Guidance Document).

Publically owned GI/LID integrated management practices will be maintained by Augusta using either county forces or outside contract services. The maintenance of such structures will commence not later than April 2015. Maintenance will be tracked using our existing enterprise work order management system.

All inspection will be done by Augusta Staff or in assistance with contract services. Augusta will use the maintenance plan provided by the Engineer of Record as the primary inspection tool for verifying that the structure is properly maintained and functioning as designed. This procedure will apply to both publically owned and privately owned structures. Since the design and function of each GI/LID structure varies, our professional opinion is that a single maintenance plan will not be a good approach to ensure these structures are functioning as designed.

Maintenance Inspection of these GI/LID BMPS will be performed at a schedule such that minimum 20% of BMPs are inspected each year, beginning in April 2015 as required by the MS4 permit. Inspection information will be submitted annually starting with MS4 2015-2016 annual report.